We claim:

1. A boiler and condenser system comprising:

a) a housing;

b) at least three spaced-apart and generally concentric shells within the housing extending and rotating about an axis of rotation, the at least three shells comprising an inner shell closest the axis of rotation, and outer shell farthest from the axis of rotation and a middle shell between the inner shell and the outer shell, the shells forming two spaces, an inner space between the inner shell and the middle shell, and an outer space between the middle shell and the outer shell; each space having two ends;

c) a compressor having a lower pressure side and a higher pressure side, the lower pressure side communicating with the inner space and decreasing the pressure in the inner space, the higher pressure side communicating with the outer space;

d) a source of fluid; an injector operably connected to the source of fluid and to the inner space transmitting the fluid into the inner space;

e) an outlet from the outer space through which fluid can flow; and

f) a collector in the housing into which fluid from the outlet collects.

2. The boiler and condenser system of claim 1 further comprising a tube connected to the source of fluid, a plurality of tubular members communicating with the tube and receiving fluid from the tube, at least a portion of each tubular member being adjacent the inner shell and middle shell, the injector being attached to the tubular member where the tubular member is adjacent the inner shell and middle shell.

3. The boiler and condenser system of claim 1 wherein the compressor is a fan, the fan rotating about the axis of rotation of the shells.

4. The boiler and condenser system of claim 3 wherein at least a portion of the fan is located inside the shells

5. The boiler and condenser system of claim 3 further comprising a duct downstream from the fan.

6. A method for processing contaminated liquid comprising:

a) subjecting a plurality of spaced-apart shells to a first reduced pressure, the shells conducting heat energy, each shell having a common axis of rotation and having a space between adjacent shells, an inside surface facing toward the axis of rotation and an outside surface facing away from the axis of rotation; the shells forming a first set and a second set of shells, a shell of each set alternating with a shell of the other set as the shells extend outward from the axis of rotation;

b) rotating the shells about their axis of rotation;

c) injecting liquid along the shells of the first set of the rotating shells, the liquid forming a film on the inside surface of the first set of rotating shells;

d) further lowering the pressure to a second reduced pressure between the inside surface of the first set of rotating shells and the outside surface of the second set of rotating shells; the second reduced pressure being low enough to cause a portion of the liquid to boil and create a vapor and a portion to remain as sludge;

e) compressing the vapor and directing the vapor to the space between the outside surface of the first set of rotating shells and the inside surface of the second set of rotating shells, the vapor contacting and condensing to form a condensate on the outside surface of the first set of rotating shells, the rotation of the shells causing the condensate to collect on the inside surface of the second set of rotating shells;

f) collecting the condensate from the inside surface of the second set of rotating shells; and

g) collecting the sludge from the inside surface of the first set of rotating shells.

7. The method of claim 6 further comprising the condensate flowing off the outside surface of the first set of rotating shells where it collects, directing the collected condensate toward the axis of rotation and passing the condensate out of the system near the axis of rotation.

8. An apparatus for purifying contaminated liquids comprising:

an outer chamber under reduced pressure

an inner housing within the outer chamber having at least a pair of first and second generally concentric shells rotating about a common axis of rotation, each shell having an inlet end and an outlet end;

a contaminated liquid inlet extending from outside the outer chamber to the inlet end of the first shell,

a compressor downstream from the outlet end of the outlet end of the first shell;

a clear path from the outlet end of the first shell to the compressor and from the compressor to the inlet end of the second shell;

a contaminant outlet downstream from the outlet end of the first shell and a purified liquid outlet downstream from the outlet end of the second shell

9. The apparatus of claim 8 wherein the outlet end of each shell has a larger diameter than the inlet end of the shell.

10. The apparatus of claim 8 wherein the outer chamber comprises a pair of hubs aligned with the axis of rotation, a shaft extending through each of the hubs, each shaft supporting a bearing, and each bearing supporting one end of the inner housing for rotating about the bearing.

11. The apparatus of claim 10 wherein each shaft is hollow, the contaminated liquid inlet comprising an inlet tube extending through one of the hollow shafts.

12. The apparatus of claim 11 further comprising branch tubes communicating with the inlet tube, the branch tubes having at least a portion adjacent the inlet end of the shells, and at least one injector communicating with the branch tubes, the injector injecting contaminated liquid into the inlet end of the shells.

13. The apparatus of claim 8 wherein the inlet ends of the shells are coplanar and the outlet ends of the shells are coplanar, the compressor comprising a fan mounted at the axis of rotation.

14. The apparatus of claim 13 wherein at least a portion of the fan is mounted adjacent the plane of the outlet ends of the shells.

15. The apparatus of claim 13 further comprising a duct about the axis of rotation and communicating with the fan.

15. The apparatus of claim 8 wherein the outer chamber comprises a pair of hubs aligned with the axis of rotation, a shaft extending through each of the hubs, the compressor comprising a fan mounted at the axis of rotation to one of the shafts.

16. The apparatus of claim 8 wherein the outer chamber comprises a pair of hubs aligned with the axis of rotation, a shaft extending through each of the hubs, the apparatus further comprising a first collector ring mounted adjacent the inlet end of the shells and having a diameter larger than the shell having the largest diameter, a stationary dip tube extending from the first collector ring to an outlet adjacent one of the shafts.

17. A process for purifying contaminated liquid comprising:

rotating at least a pair of first and second concentric shells about a common axis of rotation, each shell having an input and an output end and an inner surface facing the axis of rotation and an outer surface facing away from the axis of rotation; the shells being under vacuum;

injecting contaminated liquid at the inlet end of the first shell; the contaminated liquid boiling along a the inside surface of the first shell to create a purified vapor and a remaining liquid containing contaminants;

applying a pressure to the purified vapor to raise the pressure of the purified vapor and direct the vapor to the inlet end of the second shell, the purified vapor condensing as purified liquid along the outer surface of the first shell, centrifugal force projecting the purified liquid against the inner surface of the second shell; and

collecting the purified liquid from the output end of the second shell and collecting the remaining liquid from the output end of the second shell.